DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Casey, William
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-028067
Date Inspected: 27-Jul-2012

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 900
OSM Departure Time: 1930
Location: Job Site

CWI Name: William Sherwood and Steve Jensen

CWI Present:	☑ Yes	☐ No					
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: SAS Tower

Summary of Items Observed:

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At OBG 12W/13W LS3 longitudinal stiffer inside, this QA randomly observed ABF welder Mike Jimenez continuing to perform 3G (vertical) Shielded Metal Arc Welding (SMAW) complete joint penetration (CJP) welding fill pass on the stiffener splice butt joint. The stiffener plates being welded are made of high strength plate material HPS 485W and has a thickness of 35mm. The joint has a double ‘V’ joint preparation with ceramic backing that is being welded from one side and after the completion from one side, the ceramic backing will be removed then back gouged. The welder was noted using E9018H4R with 3.2mm diameter electrode implementing Caltrans approved welding procedure specification (WPS) ABF-WPS-D1.5-1012-3. The splice joint was preheated to greater than 200 degrees Fahrenheit using Miller Proheat 35 Induction Heating System with the heater blanket located at the opposite side of the plate prior/during welding. The QA Inspector noted the ABF QC Steve Jensen was on site monitoring the in process preheats and welding parameters. Measured working current during welding was 126 amps on a 3.2mm E9018H4R electrode. QC was also closely monitoring the issuance of E9018H4R electrodes due to its limited exposure time allowed. The welder continued fill pass welding until the end of the shift and held the same preheat of >200°F on the splice butt joint for three hours after welding as required.

At OBG 12W-W2.1 corner drop-in assembly top deck plate inside, QA randomly observed ABF/JV qualified welder James Zhen continuing to perform back welding on butt joint location Y=29500mm to Y=31000mm. The welder was noted welding in the 4G (overhead) position utilizing a dual shield Flux Cored Arc Welding

(FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3110-4. The welder was using a track mounted welder holder assembly that is remotely controlled. The joint being welded has the steel backing bar removed and gouged using carbon air arc gouging and was ground smooth. The backing bar removal was also tested using Magnetic Particle Testing (MT). The butt joint was preheated to greater than 200 degree Fahrenheit using Miller Proheat 35 Induction Heating System with the heater blanket on top of the weld joint. During welding, ABF Quality Control (QC) Steve Jensen was noted monitoring the welding parameters of the welder. The parameters measured during welding were 260 amperes, 22.6 volts with travel speed of 180 mm per minute travel speed which are deemed acceptable to contract specifications. At the end of the shift, FCAW-G cover pass welding was completed at location mentioned above.

At OBG 12W-W2.1 corner drop-in assembly top deck plate inside, QA randomly observed ABF/JV qualified welder Jin Pei Wang continuing to perform back welding on butt joint location Y=20300mm to Y=21800mm. The welder was noted manually welding in the 4G (overhead) position utilizing a dual shield Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3110-4. The joint being welded has the steel backing bar removed and gouged using carbon air arc gouging and was ground smooth. The backing bar removal was also tested using Magnetic Particle Testing (MT). The butt joint was preheated to greater than 200 degree Fahrenheit using Miller Proheat 35 Induction Heating System with the heater blanket on top of the weld joint. During welding, ABF Quality Control (QC) Steve Jensen was noted monitoring the welding parameters of the welder. The parameters measured during welding were 255 amperes, 22.6 volts with travel speed of 160 mm per minute travel speed which are deemed acceptable to contract specifications. At the end of the shift, cover pass welding was completed at location mentioned above.

At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC VT/MT of the Complete Joint Penetration (CJP) welding of drop-in top deck plate and floor beam butt joints. The QA verification was performed to verify that the welding and the VT/MT inspection performed by the QC inspector meet the requirements of the contract documents. At the conclusion of the QA verification it appeared that the weld and the QC inspection complied with the contract documents.

1. 13E-14E-A2.1 – ground flush top weld cover QA verified
2. 13E-PP121.5-BF2 – floor beam flange weld cover QA verified
3. 13E-PP123-E2.1-BW1 – floor beam web weld cover QA verified
4. 13E-PP123-E2.1-BF1 – floor beam flange weld cover QA verified
5. 13E-PP123-E2.1-BF2 – floor beam flange weld cover QA verified
6. 13E-PP123.5-E2.8-BW1 – floor beam web weld cover QA verified

WELDING INSPECTION REPORT

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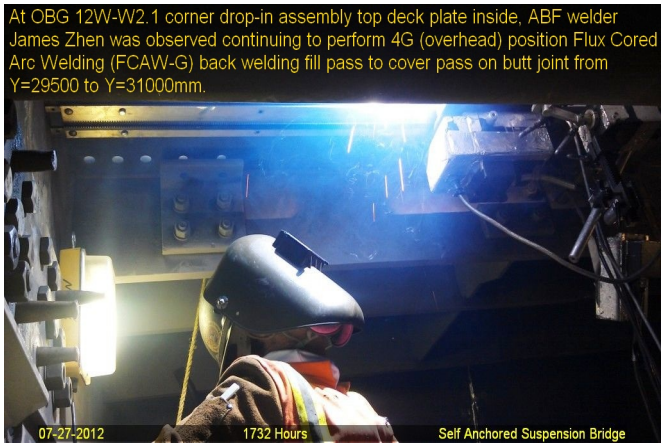

Summary of Conversations:

No significant conversation ocurred today.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Lizardo,Joselito	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer